

Class 216 is an integral part of this Class (Class 156), as shown by the position of this box, and follows the schedule hierarchy of this Class, retaining all pertinent definitions and Class lines of this class.

1 **METHODS**

39 ..Plaster board making
40 ..With bending or folding of facing sheet
41 ..With water-proofing with added material
42 ..With embedding of reinforcing material during or subsequent to core formation
43 ..Pore forming in situ
44 ..With preliminary treatment of facing sheet
45 ..With subsequent treatment of plaster board
46 ...Perforating
47 ..Making electrical conductors of indefinite length
48 ..With filling of void or cavity with fluent material
49 ..Splicing
50 ..With mechanical working of conductor
51 ..Covering of conductor
52 ...With preformed material
53 Wrapping of sheet material (e.g., tape) about conductor and/or conductor assembly
54 By longitudinally bending sheet
55 Plural spaced conductors
56 Plural covering operations
57 ..Maintaining the natural appearance of plants or animal parts
58 ..Contour or profile photography to reproduce three-dimensional objects
59 ..Relief or intaglio representations of three-dimensional objects (e.g., relief modeling of photographs)
60 ..Surface bonding and/or assembly therefor

61 ..Simulated products of nature
62 ..With manual drawing or engraving
62.2 ..With formation of lamina by bulk deposition of discrete particles to form self-supporting article
62.4 ...Liberation or formation of fibers
62.6 ...By joining portions of batt to itself
62.8 ...To similarly formed batt
63 ..Manually arranging different colored or shaped discrete elements to form design
64 ..With measuring, testing, or inspecting
65 ..Of multiple spaced elements between and transverse of parallel webs (e.g., Venetian blind ladders)
66 ..Adhesive application of fasteners to articles (e.g., slide fastener to garment)
67 ..Utilizing phosphorescent or fluorescent material
68 ..With fur removal from animal pelt
69 ..Application of end closures to containers
70 ..Encasing movable or loosely confined element between adhering lamina (e.g., drawstrings)
71 ..Of lamina to building or installed structure
72 ..Setting or embedding tufts or discrete pile elements onto backing (e.g., rugs, brushes, etc.)
73.1 ..With sonic or ultrasonic treatment
73.2 ...Rod, strand, or filament
73.3 ...With sonic or ultrasonic cutting
73.4 ...Sheet or web splicing
73.5 ..Friction treatment (e.g., welding)
73.6 ..Vibratory treatment
74 ..With application of centrifugal force
75 ..With balancing of product
76 ..With parchmentizing or transparentizing

77	..With pore forming in situ to form cellular lamina	91	..With separate permanent mechanical joining means (riveted, sewed, stapled, etc.)
78	...Foaming	92	...With penetrating of fastener
79	....Subsequent to assembly of laminae	93	....Sewing
80	..With refrigeration or freezing	94	..Reclaiming, renewing or repairing articles for reuse
81	..With melting or gasification of permanently associated solid material in situ in airtight cavity	95	...Toroidal shapes (e.g., tire or tube)
82	..With flame contact of lamina	96	....Adhesively secured tire retreads
83	..With swelling of material of lamina	97	....Puncture repairing
84	..With shrinking of material of lamina	98	...With removal of defective area to be repaired
85	...Subsequent to assembly of laminae	99	..Optically transparent glass sandwich making (e.g., window or filter)
86	....Of lamina covering cylindrical or spherical body	100	...Variegated colored lamina or interlayer
87	..Providing escapeways for gases trapped or generated between layers	101	...With cutting or breaking or partial removal of interlayer and/or lamina
88	..Fray-prevention by bonding	102	...With deformation or shaping of interlayer and/or lamina
89.11	..With vitrification or firing ceramic material	103	...With application of plural sequential pressures
89.12	...Forming electrical article or component thereof	104	...With air evacuation between laminae
89.13	....Elemental carbon containing (e.g., graphite, etc.)	105	...Directly applied fluid pressure
89.14	....Inorganic titanate compound containing	106	...With preformed intermediate adhesive layer
89.15	....Nitride compound containing	107	...Sandwich edge sealing
89.16	....Elemental metal or alloy containing	108	..Mounting transparent lamina over window opening (e.g., slide-mounting)
89.17	.....Silver containing	109	..Multipane glazing unit making (e.g., air-spaced panes)
89.18	.....Copper containing	110.1	..Making flexible or resilient toroidal shape; e.g., tire, inner tube, etc.
89.19	.....Tungsten containing	111	...Moving work progressively to separate assembly stations
89.21	.....Molybdenum containing	112	...Solid tire type (i.e., nonpneumatic)
89.22	...Honeycomb-like	113	....Having cushioning void or cavity
89.23	...With wax or wax-like processing aid	114	...Incorporation of solid nonrubber material at exposed tread surface of tire (e.g., anti-skid)
89.24	...Coloring agent containing	115	...Applying flowable puncture sealing material
89.25	...Elemental carbon containing (e.g., graphite, etc.)		
89.26	....Carbon fibers or filaments		
89.27	...Nitride compound containing		
89.28	...Elemental metal or alloy containing		
90	..Utilizing layer to prevent migration or bleeding between laminae		

116	...Applying differently colored material at sidewall (e.g., white wall)	140	....With plastic shaping or molding
117	...Building tires directly from strands or cords	141	....Wrapping of belt prior to shaping
118	...Tubular (airtight) torus (e.g., auto tube-making)	142	....With cutting to "V" or trapezoid section
119	....Multichamber safety tube	143	..Helical wire or plural ring reinforced flexible tube making
120	....Valve-applying	144	...Assembling preformed helical coil or rings with separate tube
121	....Applying reinforcing material to external tube surface	145	..With encapsulating of permanently fluent material in hollow or porous lamina or filling of space between adhered laminae
122	....Joining tube ends to form torus	146	...Prior to bonding of laminae (e.g., golf balls)
123	...Of plural layers	147	....With inflation of airtight cavity
124	....At least one layer including metal cords	148	..With weaving, knitting, braiding, twisting or needling
125	....With injection molding of outer lamina	149	...About tubular lamina
126	....Axially assembling preformed flexible endless bands	150	..With electro-deposition
127	.....With tread-preforming	151	...On adherent surface of lamina prior to assembly
128.1	....Applying tread material to fully-formed carcass	152	..With temporary disassembling and subsequent bonding of same laminae
128.6	.....With specified treatment of tread material before application to carcass	153	..With abrading or grinding of lamina
129	.....Shaping	154	...Subsequent to assembly
130	.....By winding or including application of inextensible lamina under tread bond	155	..With destruction of solid transitory material; e.g., dissolving, melting, etc.
130.3	....With specified procedure for interlocking of lamina or removal of air from therebetween; e.g., "stitching", etc.	156	..With fluid pressure to prevent collapse of hollow structure during assembly and/or joining
130.5	....With specified procedure for cooling or heating; e.g., for vulcanization, etc.	157	..Joining indefinite length laminae end-to-end
130.7	....With specified procedure for bead, carcass or sidewall formation	158	...Of wire, rod, tube or filament
131	....Bead-applying	159	...With cutting of joining ends
132	.....Folding fabric about bead	160	..Bonding in stressed condition of at least one prestressed element
133	....Applying fabric to form (e.g., carcass building)	161	...Of stressed filaments
134	.....Fabric splice end treatment	162	...During winding of lamina
135	...Bead portion of carcass treatment	163	...Bonding of sheets or webs only
136	..Tire bead ring making	164	....Running length web
137	..Flexible endless drive belt making	165	...Stressing spherical or tubular body
138	...Forming grooves on inner surface	166	..Bonding of flexible filamentary material while in indefinite length or running length
139	..."V" or trapezoid section belt		

167	...With formation of filaments	198	...By inward collapsing of portion of hollow body
168	...With removal of filamentary material subsequent to lamination thereof	199	...Running or continuous length work
169	...With winding of filamentary material	200	....Longitudinal bending
170	....About spherical lamina	201	.....Prior to or during assembly with additional lamina
171	....With winding of separate sheet or web	202	....Overedge bending or overedge folding
172	....Winding about and uniting to core	203	....And edge-joining of one piece blank to form tube
173	....Winding about subsequently removed core or mandrel	204	....Folding
174	.....With cutting of filamentary material to form web or sheet	205	....Transverse corrugating
175	.....Of filamentary material only	206	.....Subsequent to assembly of laminae
176	...To web of indefinite length	207	.....With deformation or cutting of corrugated lamina
177	...With axis of filamentary material nonparallel to axis of web	208	.....Treating material of corrugated lamina or dry adhesive thereon to render tacky
178	....Plural filaments	209	....Surface deformation only (e.g., embossing)
179	.....Between plural webs	210	...To form undulated to corrugated sheet and securing to base with parts of shaped areas out of contact
180	...Of filamentary material only to form article	211	...With slitting or removal of material at reshaping area prior to reshaping
181	....Article is sheet or web	212	...By bending, drawing or stretch forming sheet to assume shape of configured lamina while in contact therewith
182	..Of at least two bonded subassemblies	213	....Encasing or enveloping the configured lamina
183	..With creping, wrinkling, crinkling	214	....With preshaping of lamina
184	..With winding of web or sheet	215	....Flexible sheet to cylinder lamina
185	...Uniting to separate core	216	...Overedge bending of lamina about edges of sheetlike base
186	....Spherical core	217	...Bending of one piece blank and joining edges to form article
187	....Tubular core	218	....Hollow cylinder article
188	.....Sequential winding of separate webs	219	...Surface deformation only of sandwich or lamina (e.g., embossed panels)
189	...About irregular or configured mandrel surface	220	....Subsequent to lamination
190	...Sequential winding of separate webs	221	...Subsequent to assembly
191	...With additional assembly (other than winding)	222	....Of parallel stacked sheets only
192	....Prior to winding	223	.....Bending of one lamina only
193	...With cutting of wound body (excludes nominal cutoff)	224	.....To form dished or receptacle-like product
194	...With reshaping of wound body	226	....Folding only
195	...Longitudinally progressive helical winding		
196	..With permanent bending or reshaping or surface deformation of self sustaining lamina		
197	...By separating laminae between spaced secured areas (e.g., honeycomb expanding)		

227	...By folding	244.25	....Article or at least one lamina of nonuniform thickness or discontinuous
228	..Of preshaped laminae between closed similarly shaped press platens or clamps	244.26	....Bonding in specified environment (other than temperature)
229	..With stretching	244.27	....Pressure assisted bonding
230	..Direct contact transfer of adhered lamina from carrier to base	245	...In configured mold
231	...With formation of lamina of continuous length by molding or casting on endless carrier	246	...On temporary planar support (e.g., film casting)
232	...Carrier is configured mold	247	..With stripping of adhered lamina
233	...Metal foil lamina	248	...With cutting of one lamina only while adhered
234	...Of portion only of lamina from carrier	249	...And assembly with different lamina
235	...Plural transferring operations and/or with additional laminating	250	..With cutting, punching, tearing or severing
236	...Solvent other than water to release lamina	251	...And simultaneously bonding (e.g., cut-seaming)
237	...Coating of transferred lamina	252	...Perforating lamina
238	...Running or continuous flexible web carrier	253	....Subsequent to assembly of laminae
239	...Plural superimposed laminae transferred	254	...Splitting sheet lamina in plane intermediate of faces
240	....Transfer of printing or design	255	...Spiral peeling
241	...To base coated with adhesive	256	...Prior to assembly
242	..With lamina formation by molding or casting	257	....Partial cutting (e.g., grooving or incising)
243	...Forming plural continuous web laminae	258	....Cutting to shape joining edge surfaces only
244.11	...By extrusion	259	....Continuous longitudinal slitting
244.12	....Encapsulating or enclosing a lamina	260	....Bonding face to face of laminae cut from single sheet
244.13	....Hollow article or lamina	261	....Punching and bonding pressure application by punch
244.14	.....Differential fluid pressure used	262	....Closure cap liner applying type
244.15	.....Specific nonuniform lamina or article; e.g., netting or rib and groove, etc.	263	....Separate cutting of separate sheets or webs
244.16	....With printing	264	....Of plural laminae from single stock and assembling to each other or to additional lamina
244.17	....Electrical, magnetic, or wave energy used	265	....Applying plural cut laminae to single face of additional lamina
244.18	....With cutting, severing, or perforating	266	....Joining of cut laminae end-to-end
244.19	.....After bonding; e.g., as finishing step, etc.	267	...Flash, trim or excess removal
244.21	....Differential fluid pressure used	268	...Partial cutting bonded sandwich (e.g., grooving or incising)
244.22	....Bonding spaced preforms	269	...Of continuous or running length bonded web
244.23	....Pretreatment		
244.24	....Post-treatment		

270	....One web only	285	..Direct application of vacuum or fluid pressure during bonding
271	....Continuous longitudinal slitting	286	...To remove gas from between assembled laminae
272.2	..With direct application of electrical, magnetic, or radiant energy to work	287	...To the lining of hollow body
272.4	...Involving magnetically susceptible lamina or incorporating into the work a particulate susceptor material having magnetic properties	288	..Simultaneous pressure application to at least two separate sandwiches
272.6	...Exposure of work to corona or glow discharge	289	..Utilizing parting or release material to prevent adhesion
272.8	...Exposure of work to laser	290	..Bonding of facing continuously contacting laminae at spaced points only
273.1	...Developing electrostatic charge	291	...By nonuniform adhesive application
273.3	...Before final assembly; e.g., to cure lamina, etc.	292	..Of laminae having opposed facing areas out of contact
273.5	....Before and after final assembly	293	..Inserting of lamina in hole, aperture or recess of other lamina and adherence to side walls thereof
273.7	...Applying pressure before electrical, magnetic, or radiant energy	294	...Core within tube
273.9	...Work constitutes conductor of electrical circuit	295	..Adhesive applying to restricted area and spreading thereof by assembly pressure
274.2	....Conductor is a coil	296	..Strands, rods, tubes or sticklike bodies to each other only
274.4	...Exposure of work to electrode	297	..Of discrete laminae to single face of additional lamina
274.6	....Continuously moving work in relation to electrode	298	...Embedding of laminae within face of additional laminae
274.8	....With application of adhesive	299	...All laminae planar and face to face
275.1	..Only part of containing lamina surfaces bonded; e.g., seaming, etc.	300	....With covering of discrete laminae with additional lamina
275.3	....With application of adhesive	301	....Opposed laminae are running length webs
275.5	...To polymerize or cure material in work	302	....Lamina is running length web
275.7	...With application of adhesive	303	....Feeding of discrete laminae from separate sources
276	..With mass application of nonadhesive fibers or particles between laminae	303.1	..Inserting lamina into preformed plastic body
277	..With printing	304.1	..Butt edge joining of laminae
278	..With coating of nonadherent face of lamina	304.2	...Joining of nonplanar elements; e.g., configured hollow objects, etc.
279	...Coating with fibers or particles	304.3	...With joiner member or reinforcement
280	...Subsequent to bonding	304.4	....Carpet or fabric joined
281	..Combined; e.g., with cleaning, etc.	304.5	...With preliminary edge treatment or joining of edges of irregular shape; e.g., tongue and groove, beveled, etc.
282	..Simultaneous heating and cooling		
283	..Adhesive applied as dry particles		
284	...Treating particle with liquid to render tacky		

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| 304.6 | ...By heat | 314 | ..Sequentially applying different liquids or liquefiable materials to adhering face of lamina |
| 304.7 | ...Of carpet or fabric | | |
| 305 | ..By applying after assembly an adhesive, solvent or chemical activating agent | 315 | ...At least two liquids rubber and/or resin-containing |
| 306.3 | ..By pressure or drying only, without tack; e.g., for easy delamination, etc. | 316 | ...First applied liquid acid-containing |
| 306.6 | ..Using single, preformed, diverse bonding lamina between other laminae | 317 | ...Protein-containing liquid |
| 306.9 | ...Including curing of nonfully polymerized material | 318 | ...Carbohydrate-containing liquid |
| 307.1 | ..By curing of nonfully polymerized self-sustaining lamina | 319 | ...One liquid containing inorganic material only |
| 307.3 | ...With coating or impregnating a face to be adhered | 320 | ..Heating of dry adhesive on lamina prior to assembly contact |
| 307.4 |Indefinite plurality of similar impregnated thin sheets; e.g., "decorative laminate" type, etc. | 321 | ..Heating adhesive by contacting with heated lamina |
| 307.5 |Coating solidified; e.g., by drying, etc., before assembly | 322 | ..Heating lamina prior to assembly or adhesive applying |
| 307.7 | ...Including uncurable lamina; e.g., metal, paper, etc. | 323 | ..Interposing subsequently removed flexible element between lamina and a pressure applying surface |
| 308.2 | ..By tackifying substance of self-sustaining lamina to be bonded; e.g., autogenous bonding, etc. | 324 | ..Running or continuous webs of indefinite length |
| 308.4 | ...Only part of contacting laminae surfaces bonded; e.g., seam, seal, etc. | 324.4 | ..By tackifying a single lamina of intermediate laminate |
| 308.6 | ...With treating agent application to a surface | 325 | ..Particular adhesive |
| 308.8 |Plural agents applied sequentially or to different laminae or using water as sole agent | 326 | ...Organic containing |
| 309.3 |Diverse laminae | 327 |Synthetic resin containing |
| 309.6 | ...Involving defined plastic flow or melting of entire lamina | 328 |With carbohydrate and/or protein or derivatives thereof |
| 309.9 | ...With heating of lamina prior to assembly | 329 |Silicon resin |
| 310 | ..Of laminae having a different coating on at least two mating surfaces | 330 |Epoxy resin |
| 311 | ..Sequential heating and cooling during pressure applying | 330.9 |Nitrogenous resin |
| 312 | ..Sequential different pressure applying | 331.1 |With polymerization completion, i.e., curing, after assembly |
| 313 | ..Interposing intermediate laminate between non-coated laminae | 331.2 |N only in unlinked side-chain or side-ring |
| | | 331.3 |Derived from aldehyde or ketone |
| | | 331.4 |Iso- or thio-cyanate moiety reacted in curing |
| | | 331.5 |N in a ring |
| | | 331.6 |N only in unlinked side-chain or side-ring; e.g., polyvinyl, pyridine, etc. |
| | | 331.7 |Derived from iso- or thio-cyanate; e.g., polyurethane, etc. |
| | | 331.8 |Derived from acyclic compound containing N |

- 331.9And aldehyde, ketone, or carbocyclic moiety-containing compound
- 332Polycarboxylic acid ester resin
- 333Halogenated hydrocarbon resin
- 334Hydrocarbon resin
- 335Phenolic-aldehyde resin
- 336Protein and/or carbohydrate containing and/or derivatives thereof
- 337Bituminous containing
- 338Natural rubber containing
- 344 .Delaminating, per se
- 345.1 **DIFFERENTIAL FLUID ETCHING APPARATUS**
- 345.11 .For liquid etchant
- 345.12 ..With mechanical polishing (i.e., CMP-chemical mechanical polishing)
- 345.13 ...With measuring, sensing, detection or process control means
- 345.14 ...With wafer retaining ring
- 345.15 ..With measuring, sensing, detection or process control means
- 345.16 ...With endpoint detection means
- 345.17 ...Liquid etchant spray means
- 345.18 ..With means to supply, remove, or recycle liquid etchant outside of etching tank or chamber (e.g., supply tanks or pipe network)
- 345.19 ..With mechanical mask or shield or shutter for shielding workpiece
- 345.2 ..Running length workpiece (e.g., etching indeterminate length strip)
- 345.21 ..Liquid etchant spray type
- 345.22 ..With plural etching zones for a single discrete workpiece in apparatus
- 345.23 ..With specified workpiece support
- 345.24 .With measuring, sensing, detection or process control means
- 345.25 ..For endpoint detection
- 345.26 ..For detection or control of pressure or flow of etchant gas
- 345.27 ..For temperature detection or control
- 345.28 ..For detection or control of electrical parameter (e.g., current, voltage, resistance, power, etc.)
- 345.29 .With etchant gas supply or exhaust structure located outside of etching chamber (e.g., supply tank, pipe network, exhaust pump, particle filter)
- 345.3 .With mechanical mask, shield or shutter for shielding workpiece
- 345.31 .With means for passing discrete workpiece through plural chambers (e.g., loadlock)
- 345.32 ..With robot arm connected by doors to plural other chambers (i.e., cluster tool)
- 345.33 .With gas inlet structure (e.g., inlet nozzle, gas distributor)
- 345.34 ..Showerhead-type
- 345.35 .With plasma generation means remote from processing chamber
- 345.36 ..By microwave
- 345.37 .With heating or cooling means for apparatus part other than workpiece support
- 345.38 .With multiple gas energizing means associated with one workpiece etching
- 345.39 .With means to generate and to direct a reactive ion etchant beam at a workpiece
- 345.4 .With means to direct electron beam or ion beam to a gas to energize the gas
- 345.41 .With microwave gas energizing means
- 345.42 ..With magnetic field generating means for control of the etchant gas
- 345.43 .Having glow discharge electrode gas energizing means
- 345.44 ..Electrically coupled to a power supply or matching circuit
- 345.45 ..Including more than two electrodes (e.g., triode reactors)
- 345.46 ..With magnetic field generating means for control of the etchant gas
- 345.47 ..Parallel plate electrodes

345.48	.With radio frequency (rf) antenna or inductive coil gas energizing means	363	...Responsive to presence, absence, or condition of article to which applied
345.49	..With magnetic field generating means for control of the etchant gas	364	....Sheet feeding
345.5	.With means for photochemical energization of a gas using ultraviolet, visible, or x-ray radiation	365	.With safety interlocks
345.51	.With workpiece support	366	.With timing means
345.52	..With means to heat the workpiece support	367	.With electrical controls
345.53	..With means to cool the workpiece support	368	..For starting or stopping machine operation
345.54	..With means to move the workpiece inside the etching chamber	378	.With testing, measuring, and/or indicating means
345.55	...With means to cause rotary movement of the workpiece	379	.With inspecting and/or illuminating means
346	PLASTER BOARD MAKING APPARATUS	379.6	.With means applying wave energy or electrical energy directly to work
347	.With surface deformation means	379.7	..To an electrically conductive lamina or component incorporated into the work
348	.With edge treatment means	379.8	..With means to assemble laminae or position them relative to each other
349	SURFACE BONDING MEANS AND/OR ASSEMBLY MEANS THEREFOR	379.9	...With plural diverse heating means
350	.Automatic and/or material-triggered control	380.1	...With tube-forming means
351	..Plural interrelated sensing means	380.2	...With electrode or coil member contacting work
352	..To stop operation of complete machine	380.3	....Electrodes on opposing sides of smallest dimension of work
353	..Of cutter	380.4	....With means moving one electrode toward the other electrode
354	...And separate means feeding cut pieces in sequence and applying to serially conveyed articles	380.5	.....With means to change the configuration of a lamina, e.g., folding, deforming, etc.
355	...Responsive to feed of article to which cut piece is applied	380.6	..With electrode having a mechanical function; e.g., pressing, etc.
356	..Of application of fluent material to work	380.7	...Cutting, tearing, or breaking function
357	...By presence or absence of work to which applied	380.8	...Shaping or deforming function; e.g., patterned electrode, etc.
358	..Of application of bonding pressure	380.9	..With radiant heater not touching work
359	..Of temperature and/or motion of heat exchange means	381	.Chamber enclosing work during bonding and/or assembly
360	..Means responsive to weight or dimension	382	..Evacuated or fluid pressure chamber
361	..Of feed or motion of indefinite length work or transfer carrying tape	383	.Means encasing separate nonadhered part between adhered laminae
362	..Of feed of articles to assembly station	384	.With printing
		385	..Simultaneous with bonding
		386	...Printing member also bonds

387	..Printing	411	....Pressing means manually advanced toward the axis or rotation of the supporting structure
388	..After bonding		
389	..Including cleaning, conditioning or renewing means for apparatus	412	...Resilient or deformable surface pressing or bending element
390	..With coating means for work (other than laminating adhesive)	413	...Plural sequential pressing or bending elements
391	..Work-secured and/or work-guided	414	..Building drums, per se
392	..Pipe wrapping type	415	...Axially or widthwise adjustable or collapsible
393	..With braiding or weaving means	416	...Resilient and/or inflatable core
394.1	..Tire body building type	417	...Collapsible
395	..Means delaminating protective liner from lamina	418	....Rack and pinion type actuator
396	..Multiple discrete building forms and/or means advancing a building form through multiple work stations	419	....Resilient spring actuated
397	..Means building tires from strands or narrow tapes	420	....Toggle linkage lever type actuator
398	..Means operating on the bead portion of the tire	421	..Stitching elements, per se
399	...Means trimming fabric adjacent bead	421.2	..Tire chamber and means regulating interior casing pressure
400	...Means folding carcass fabric about a bead	421.4	..With means for folding lamina while on drum
401	....Inflatable bag type	421.6	..Tire support with pressing or heating means
402	....Disc or roller type	421.8	..Ring-shaped lamina stretching means
403	...Means placing bead ring on tire carcass	422	..Tire bead ring winding type
404	..Solid tire building type	423	..Means assembling part within hole or aperture (telescoping)
405.1	..With fabric or tread stock feeding means	424	..Electric lamp or space discharge device envelope basing type
406	...Means selecting stock from multiple source	425	..Longitudinally progressive helical winding means
406.2	...For transporting discrete ring-shaped lamina	426	..With means cutting wound body to form sheet or web
406.4	...With cutting, heating, laminating, or shaping means upstream of assembling means	427	...Strands secured to web
406.6	....Stretching means	428	..Forming and/or covering indefinite length article
407	..Centerless core or off-center support of annular tire structure	429	...Rotating core or mandrel
408	..Relative traversing motion between rotating tire supporting structure and pressing or bending means	430	...By winding plural strands or webs
409	...Compound traversing motion	431	....About circular section core or mandrel
410	....With changing direction of force of pressing or bending means with respect to the axis of rotation of the supporting structure (e.g., curved drum)	432	....Plural discrete axially spaced winding means
		433	..Indefinite or running length flexible strand, rod, tube, or filament uniting
		434	..Means applying transverse spacers to spaced parallel strands

435	..Pile fabric making type	468	...Means bending to configuration of part to which secured
436	..To indefinite or running length web	469	...Transverse withdrawal of shaping or shape-retaining elements
437	...With means forming web by calendering	470	...And means applying separate web to shaped web
438	...With means folding web longitudinally	471	....While still on shape-retaining means
439	...Transversely of web	472	.....Fluted roll-shape retainer
440	....Reciprocating feed means for strand	473	.....Separate means holding web in flutes
441	..Means gathering strands or filaments only into indefinite length	474	...Pleating means
441.5	..Envelope sealing type	475	..To configuration of part to which secured
442	..With stamp applying means	476	...Plural discrete bending means, each acting on separate article
442.1	..With bending or folding means	477.1	...Plural, distinct, sequential bending or folding means
442.2	..With feeding means	478	....Intersecting bend axis
442.3	...Reciprocating feed	479	.....Means bending sheet over edges of planar part
442.4	...Work traversing type	480	.....With separate member pressing bent sheet corner at axis intersection
443	..With bending, folding, winding, or wrapping means	481	....Arcuate bending
444	..Pneumatic blast to bend work	482	....Having intersecting axes of force
445	..About preformed sphere	483	...Flexible sheet across through passage for work
446	..Rotating mandrel or article	484	....Sheet applied to passage
447	...Means registering sheet with selected peripheral portion of rotating article	485	....With additional separate smoothing means
448	...Translating axis of rotation	486	...Member travels along configured part
449	....Rolling mandrel or article	487	...Flexible bristle wiping surface
450	.....Winding flexible web	488	....Bodily deformable pad type
451	.....Article rolls across sheet stack	489	....Opposed movable biased members
452	.....By gravity	490	.....Positively actuated to intermittently defeat bias
453	.....Belt feed	491	.....Cam defeats bias
454	.....By gravity	492	...By swinging folding member approaching part
455	.....Belt feed	493	...Deformable pad
456	....Axis translates in circular path	494	.With stretching or tensioning means
457	...Centerless core or mandrel	495	..By driven web feeding means
458	...Means serially feeding mandrel or article to applying station	496	...To transversely stretch or tension the web
459	..For an indefinite or running length flexible web	497	.With gas, vapor, or flame contact means for work
460	...Tire bead or endless belt covering type	498	.With work cooling means
461	...Longitudinal bending		
462	....Corrugating		
463	....Plural sequential bending means		
464	....And means feeding discrete articles to web		
465	....Single web only		
466	.....Tube-making type		
467	....And means uniting noncoextensive plural webs		

499	.With separate (nonpress) heating means for work	522	...Cutting indefinite length web after assembly with discrete article
500	.With casting, plastic molding, or extruding means	523	..Work traversing type
501	..With means generating at least one self-sustaining web (e.g., film casting)	524	...With liquid applying means
502	.Means joining flexible indefinite length or endless bodies end-to-end (e.g., film, tape, belt splicers)	525	....Slitting and severing
503	..Tube splicing type (e.g., inner tube)	526	....Cutting after bonding
504	..Moving web (flying splice or with web accumulating means)	527	...Fixed cutter
505	..Means applying adhesive tape to joint only	528	..Stamp from multiple row sheet type
506	...With severing means for tape before application	529	..With means projecting fluid against work
507	..Longitudinally moving web support moving web ends into association	530	..Cutter actuated by or secured to bonding element
508	...With scraper or adhesive applying means	531	...With liquid applicator
509	..With scraper or adhesive applying means	532	....Common actuator for bonding and liquid applying means
510	.With cutting, punching, piercing, severing, or tearing	533	.....Liquid applied to web before cutting
511	..Plural severing means each acting on a different work piece	534	.....Roller applicator
512	..Severing followed by associating with part from same source	535	.With means shaping, scarifying, or cleaning joining surface only
513	..Means making hole or aperture in part to be laminated	536	.Combined and/or convertible
514	...And securing separate part over hole or aperture	537	.With bond interfering means (slip sheet, etc.)
515	..Cutting element simultaneously bonds (e.g., cut seaming)	538	.With work feeding or handling means
516	..Means feeding plural workpieces to be joined	539	..For plural parts or plural areas of single part
517	...Severing before bonding or assembling of parts	540	...Lamina transferred to base from adhered flexible web or sheet type carrier
518	....Severing means or member secured thereto also bonds	541	....Discrete spaced laminae on adhered carrier
519	....Delivering cut part to indefinite or running length web	542	....Means serially presenting discrete base articles or separate portions of a single article
520	.....Cutter also delivers cut piece	543	...Indefinite or running length work
521	....Delivering cut part in sequence to serially conveyed articles	544	....Means joining indefinite length work edge to edge
		545	....Means applying adhesively secured tape to seam
		546	....Means applying fluid adhesive to work edge
		547	...Means applying fluent adhesive or adhesive activator material between layers
		548	.....At spaced areas
		549	.....Plural indefinite length or running length workpieces
		550	.....Fluid applied to nip between indefinite length webs

551	.....Fluid applied to plural workpieces	580.1	..With sonic or ultrasonic means
552	....Means bringing articles into association with web	580.2	...Specified structure of sonic or ultrasonic work contacting surface
553	....Discontinuous, spaced area, and/or patterned pressing	581	..Relieved or configured pressing face
554	....Webs of different width, longitudinally aligned	582	...Rotary
555	....Progressive continuous bonding press (e.g., roll couples)	583.1	..Heated
556	..Means bringing discrete articles into assembled relationship	583.2	...Impulse heating
557	....Plural lines and/or separate means assembling separate sandwiches	583.3	...With significantly flexible platen
558	....All articles from single source only	583.4	...Nonuniform heating
559	....At least three articles	583.5	...With endless belt
560	.....At least two applied side by side to common base	583.6	...C-frame type
561	.....Plural ranks	583.7	....Electric heating
562	.....Sheet form common base	583.8	...Hinged platen
563	.....Stacked serially	583.9	....Electric heating
564	....Magazine stack directly contacting separate work	583.91	...Plural adjustable pressure points
565	....Magazine movable to work	584	DELAMINATING APPARATUS
566	....Means simultaneously conveying plural articles from a single source and serially presenting them to an assembly station	598	MISCELLANEOUS
567	.....Turret or rotary drum-type conveyer		
568	.....For flexible sheets		
569	....Means separating articles from bulk source		
570	.....Stacked sheet source		
571	.....Rotary or pivoted picker		
572	.....Translating picker		
573	..Magazine stack directly contacting work		
574	..Work traversing type and/or means applying work to wall or static structure		
575	...With liquid applying means		
576	...Grip or clamp for web end		
577	...Implement carried web supply		
578	..With liquid adhesive or adhesive activator applying means		
579	..With handle or handgrip		
580	..Presses or press platen structures, per se		

CROSS-REFERENCE ART COLLECTIONS

906	OFF-DRUM MANUFACTURE OF TIRE FABRIC OR PLY
907	..Including assembly of bias-cut fabric
908	LAMINATING SHEET TO ENTIRE EDGE OF BLOCK AND BOTH ADJACENT OPPOSITE SURFACES; E.G., BOOKBINDING, ETC.
909	APPARATUS FOR APPLYING NEW TREAD TO USED TIRE CASING; E.G., RETREADING, RECAPPING, ETC.
910	BONDING TIRE CORD AND ELASTOMER: IMPROVED ADHESIVE SYSTEM
911	DIFFERENTIAL ETCHING APPARATUS HAVING A BARREL REACTOR
912	DIFFERENTIAL ETCHING APPARATUS HAVING A VERTICAL TUBE REACTOR
913	DIFFERENTIAL ETCHING APPARATUS HAVING A HORIZONTAL TUBE REACTOR
914	DIFFERENTIAL ETCHING APPARATUS INCLUDING PARTICULAR MATERIALS OF CONSTRUCTION
915	DIFFERENTIAL ETCHING APPARATUS INCLUDING FOCUS RING SURROUNDING A WAFER FOR PLASMA APPARATUS

916 **DIFFERENTIAL ETCHING APPARATUS
INCLUDING CHAMBER CLEANING
MEANS OR SHIELD FOR PREVENTING
DEPOSITS**

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**

DIGESTS

DIG 1 **LABELLING FLAT, ESSENTIALLY RIGID
SURFACES (1/100)**
DIG 2 .Affixing labels to one flat
surface of articles; e.g., of
packages, of flat bands (1/02)
DIG 3 .Affixing labels; e.g., wrap-
around labels, to two or more
flat surfaces of a polyhedral
article (1/04)
DIG 4 ..Of a box; e.g., cigarette box
(1/06)
DIG 5 **LABELLING OTHER THAN FLAT
SURFACES (3/00)**
DIG 6 .Affixing labels to elongated
objects; e.g., wires, cables,
bars, tubes, (3/02)
DIG 7 ..Applying bands or labels to
cigars or cigarettes (3/04)
DIG 8 .Affixing labels to short rigid
containers (3/06)
DIG 9 ..To container bodies (3/08)
DIG 10 ...The container being positioned
for labelling with its
centerline horizontal (3/10)
DIG 11By rolling the labels onto
cylindrical containers; e.g.,
bottles (3/12)
DIG 12 ...The container being positioned
for labelling with its
centerline vertical (3/14)
DIG 13By rolling the labels onto
cylindrical containers; e.g.,
bottles (3/16)
DIG 14 ..To container necks (3/18)
DIG 15 ..To bottle closures (3/20)
DIG 16 ...Affixing metal foil coverings
(3/22)
DIG 17 ...Affixing labels indicating
original state of bottle snap
or screw closure (3/24)

DIG 18 .Affixing labels to nonrigid
containers; e.g., bottles made
of polyethylene, boxes to be
inflated by internal air
pressure prior to labelling
(3/26)
DIG 19 **LABELLING FABRICS OR COMPARABLE
MATERIALS OR ARTICLES WITH
DEFORMABLE SURFACE, E.G.,
PAPER, FABRIC ROLLS,
STOCKINGS, SHOES (5/00)**
DIG 20 .Using adhesives (5/02)
DIG 21 ..Thermo-activatable adhesives
(5/04)
DIG 22 .Using staples (5/06)
DIG 23 **AFFIXING TAGS (7/00)**
DIG 24 **DETAILS OF LABELLING MACHINES OR
APPARATUS (9/00)**
DIG 25 .Devices for moving articles,
e.g., containers, past
labelling station (9/02)
DIG 26 ..Having means for rotating the
articles (9/04)
DIG 27 .Devices for presenting articles
in predetermined attitude or
position at labelling station
(9/06)
DIG 28 .Label feeding (9/08)
DIG 29 ..Label magazines (9/10)
DIG 30 ..Removing separate labels from
stacks (9/12)
DIG 31 ...By vacuum (9/14)
DIG 32 ...By wetting devices (9/16)
DIG 33 ..Label feeding from strips;
e.g., from rolls (9/18)
DIG 34 .Gluing the labels or articles
(9/20)
DIG 35 ..By wetting (9/22)
DIG 36 ..By heat (9/24)
DIG 37 .Devices for applying labels (9/
26)
DIG 38 ..Air-blast devices (9/28)
DIG 39 ..Rollers (9/30)
DIG 40 ...Cooperating rollers between
which articles and labels are
fed (9/32)
DIG 41 ..Flexible bands (9/34)
DIG 42 ..Wipers; pressers (9/36)
DIG 43 .Label cooling or drying (9/38)
DIG 44 .Controls; safety devices (9/40)
DIG 45 ..Label feed control (9/42)
DIG 46 ...By special means responsive to
marks on labels or articles
(9/44)

- DIG 47 .Applying date marks, code marks,
or the like to the label
during labelling (9/46)
- DIG 48 **MANUALLY CONTROLLED OR MANUALLY
OPERABLE LABEL DISPENSERS;
E.G., MODIFIED FOR THE
APPLICATION OF LABELS TO
ARTICLES (11/00)**
- DIG 49 .Having printing equipment (11/
02)
- DIG 50 .Having means for moistening the
labels (11/04)
- DIG 51 .Having means for heating
thermoactivable labels (11/06)

